



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,102	04/11/2005	Akinori Nishihara	60562.00006	2155
32294 7590 10/25/2007 SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			EXAMINER GUILL, RUSSELL L	
			ART UNIT 2123	PAPER NUMBER
			MAIL DATE 10/25/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

47

<b>Office Action Summary</b>	Application No. 10/531,102	Applicant(s) NISHIHARA ET AL.	
	Examiner Russ Guill	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/14/2006, 4/11/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1 - 3 have been examined. Claims 1 - 3 have been rejected.

#### *Information Disclosure Statement*

2. The information disclosure statement filed June 14, 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the entry AL does not provide an author, title and date. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. The missing information would prevent publication at the time of issue.

#### *Specification*

3. The specification is objected to for the following minor informality: On page 8, line 9, the specification recites, "the power from". The phrase appears to mean, "the power form".

#### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- a. **Claim 2** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. One reasonably skilled in the art could not make or

use the invention from the disclosure in the specification, coupled with information known in the art, without undue experimentation, for the following reasons:

- i. Regarding claim 2, the claim recites in line 14, " $h_{ij}(p)$ ". The meaning of the double-subscripted term does not appear to be described in the specification.

Weighing the evidence as a whole, the Examiner concludes that one reasonably skilled in the art could not make or use the invention from the disclosure in the specification, coupled with information known in the art, without undue experimentation.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- a. Claims 1 - 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- i. Regarding claims 1 and 3 and dependent claim, the claims recite in line 1, "FIR", but the acronym is not defined in the claim. For the purpose of claim examination, the term, "FIR" is interpreted as "finite impulse response filter (FIR)". Correction or amendment is required.

*Claim Rejections - 35 USC § 101*

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1 - 3 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. Regarding claim 1 and dependent claim, the claim appears to be entirely an abstract idea, and as such is non-statutory. None of the claim limitations appear to expressly or inherently require tangible physical components. An ordinary artisan interpreting the claim in light of the specification would reasonably interpret the claim as a set of abstract operations. Further, the claim must produce either a physical transformation or have a practical application having a concrete, useful and tangible result. The program does not appear to produce a tangible result to support a practical application, nor produce a physical transformation.

b. Regarding claim 3, the claim is directed to a program, which appears to be functional descriptive material *per se*, and therefore, the claim is directed to non-statutory material. Further, the claim must produce either a physical transformation or have a practical application having a concrete, useful and tangible result. The program does not appear to produce a tangible result to support a practical application.

### *Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over MaximalFlatFIR (Saed Samadi et al.; "Universal Maximally Flat Lowpass FIR Systems", July 2000, IEEE Transactions on Signal Processing, Volume 48, Number 7, Art provided by the Applicant on the Information Disclosure Statement dated April 11, 2005) in view of FilterGenerating (Saed Samadi et al.; "Filter-Generating Systems", March 2000, IEEE Transactions on Circuits and Systems-II: Analog and Digital Signal Processing, Volume 47, Number 3, pages 214 - 221).

- a. The art of MaximalFlatFIR is directed to maximally flat FIR systems (Title).
- b. The art of FilterGenerating is directed to a method of generating filters, including FIR filters (*page 214, Abstract*).
- c. The art of MaximalFlatFIR and the art of FilterGenerating are analogous art because they both pertain to the art of FIR filters.
- d. The motivation to use the art of FilterGenerating with the art of MaximalFlatFIR would have been the multiple benefits recited in FilterGenerating including that filter generating systems are very efficient tools

for systematic generation of various modular structures for the associated family of filters (page 214, section I. Introduction, first paragraph), which would have been recognized as a benefit by the ordinary artisan.

e. Regarding claim 1:

f. MaximalFlatFIR appears to teach:

g. A method of computing FIR filter coefficients (page 1960, section E. Impulse Response Coefficients);

h. inputting a filter order of a universal maximally flat FIR filter, a number of zeros at  $z=-1$ , and a parameter for a group delay at  $z=1$ , the filter order being a positive integer, the number of zeros being an integer equal to or more than zero, the parameter being a rational number (page 1956, right-side column, second paragraph that starts with, "In this paper . . .", especially the third sentence);

i. executing a first operation by a first recurrence formula which includes parameters for the filter order, the number of zeros, and the group delay, and provides coefficients in Bernstein form representation of a transfer function of the universal maximally flat FIR filter (page 1957, section II. Simplification of Baher's formula, left-side column, top half of page, and right-side column, second paragraph that starts with, "Proof: To prove . . .");

j. MaximalFlatFIR does not specifically teach:

k. executing a second operation by a second recurrence formula composed of additions, subtractions, and divisions by 2, by using a resultant of the first operation as an initial value; and

l. extracting impulse response coefficients of the universal maximally flat FIR filter from a resultant of the second operation.

m. FilterGenerating appears to teach:

n. executing a second operation by a second recurrence formula composed of additions, subtractions, and divisions by 2, by using a resultant of the first operation as an initial value (page 219, left-side column, formulas (17), and page 218, right-side column, formula (16); it would

have been obvious that when formula 16 is used in formula 17, that the limitation is satisfied);

o. extracting impulse response coefficients of the universal maximally flat FIR filter from a resultant of the second operation (page 219, figure 6, section (b), especially the term  $u \cdot h_{i,j}$ ).

p. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of FilterGenerating with the art of MaximalFlatFIR to produce the claimed invention.

11. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

#### *Allowable Subject Matter*

12. Any indication of allowability is withheld pending resolution of the outstanding rejections.

13. Claim 2 is objected to as being dependent upon a rejected base claim.



*Conclusion*

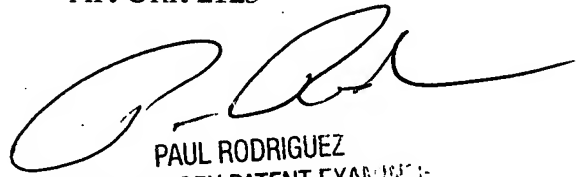
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is 571-272-7955. The examiner can normally be reached on Monday - Friday 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

Russ Guill  
Examiner  
Art Unit 2123



PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100